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Case Report Open Access

Osteopathic Care of a Twin Risk Pregnancy: Case Study

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Abstract

A 32 year old patient gravid with twins came in the 23th week of pregnancy; one of her fetus was small for date with polyhydramnion and a beginning feto-fetal transfusion syndrome. This is a very dangerous situation, in which one or both twins can die intrauterine because of the lack of nutrition and oxygen. One of the twins may become a donator and give all its nutrition to the other and won´t grow anymore itself. While the patient got continuous check-ups in the university clinic with ultrasound, she also got osteopathic treatments in short periods, first weekly and continuing with bigger pauses. This treatments were focussed on the uterus and its arterial nutrition and also the form of the uterus, to support the placenta of the twins to get as much oxygen as possible to nourish the babies. An additional focus was seeking for the healthy matrix of the babies intrauterine and if any osteopathic lesions could be found and get helped dissolved. The woman delivered healthy and equal weighted sons in the 38th week with section cesarean. The following case shows that an osteopathic treatment can effectively balance blood flow, growth and the well-being both of mother and children. A careful medical control and the ultrasound showed this effect.

Keywords: Twin pregnancy; Twin-to-twin transfusion syndrome; Monochoriotic twins; A. uterine

Introduction

In the 9th week of her pregnancy the patient Maria T. consulted Dr. Urbanek in the latter's capacity as gynaecologist. Maria is a slim, very gentle woman who appears slightly shy. She was always looking down, speaking softly and was a bit nervous. Her husband, who is a few years older, very dominant but lovingly cares for his wife, had become worried about the pregnancy. The patient suffers from emesis gravidarum. Whereas the nausea was relieved by eating, it deteriorated when sweets and fruit were ingested. In addition there was a craving for yoghurt and other dairy products as well as for meat. The patient was given a homeopathic agent and folic acid.

As the twin pregnancy manifested itself by way of the T-sign as monochorionic, diamnial, the patient was sent to the university clinic risk ambulance (foetus 1: Crown-rump length [CRL] 23 mm ≙ 9. SSW, heart action [HA] positive; foetus 2: CRL 22 ≙ 9. SSW, HA positive, T-sign). Due to an early ultrasound test one could distinguish very well between identical twins from dizygotic ones through the T-sign [1-5].

There is a higher risk for monochorionic twins to be affected by the feto-fetal transfusion syndrome (twin-to-twin transfusion syndrome (TTTS)) (approx. 30%). Mothers-to-be of monochorionic twins are therefore cared for in special clinics. Fifty percent of the cases suffer from severe TTTS which mostly leads to the death of one if not both fetuses [3-5]. The treatment is by way of laser coagulation of the communicating vessels. The survival of at least on foetus in 80% of the cases is secured following this complicated operation. This method is carried out in only a few centres in Europe but not in Vienna.

History and Osteopathic Treatment

After an inconspicuous combined test with an inconspicuous nuchal translucency in the 12th week of pregnancy (the combined test is a blood test with gestational hormones (Beta HCG=Human ChorionGonadotrope hormone and PAPP-A=Pregnancy - associated Plasmaprotein A) and a ultrasound check, to measure the nuchal translucency, which can be higher in the 11-14th week, if the child has a genetic aberration as down syndrome or trisomy 13 or 18), weekly controls at the university clinic with ultrasound of the twins and check-ups in the 14th and 19th week of pregnancy by Dr. Urbanek [1,2,6].

The patient appeared in Dr. Urbanek's surgery in a very distraught state. The day before, during a check-up at the university clinic the examining doctor had found a TTTS which showed that one foetus had pathological Doppler-flow measurements and a dystrophy. The other foetus was found to have a polyhydramnion. The findings of the ultrasound tests carried out at the university clinic showed monochorionic twin pregnancy, significant weight discrepancy of 24%, polyhydramnion in foetus 1, foetus 2 with pathological Doppler-flow measurements in the A. umbilicalis and the Ductus venosus. A high risk pregnancy [3,5].

Foetus 1: BIP 65 mm, FOD 82 mm, KU 230,9 mm, ATD 63 mm, ASD 60 mm, AU 193,2 mm, FL 41,2 mm, weight 650 g, HA pos, Polyhydramnion, Breech lie, lively movements of the child. Foetus 2: BIP 59 mm, FOD 76 mm, KU 212,1 mm, FL 37 mm, weight 492 g.

Doppler: foetus 1: A. umbilicalis PI 143, venouse Doppler A-Wave positiv, PIV 0,860, index of the hydramnion bigest distance 9,6 cm, foetus 2: A. umbilicalis 1,76, Ductus venosus A-Wave positiv, PIV 1,050, index of the hydramnion: biggest distance 5,0 cm.

Polyhydramnion (increase of the amniotic fluid) indicated an imbalance of blood flow between the two foetuses with one foetus being the donor and the other the recipient. By applying the risk free and safe Doppler examination, one can detect how intrauterine supply functions in fetuses [1,2,6,7].

The patient was advised to return to the clinic the following day for hospitalisation. Doctors at the clinic had pointed out the high risk that the second foetus might not survive the pregnancy. They therefore wanted to induce labour. It was then that the patient received osteopathic treatment by Dr. Urbanek for the first time.

Treatment in the 23rd week of pregnancy

Strong left rotation of the lower uterine segment with a confluence twist of the left uterine artery. The uterine artery coming from the

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internal iliac artery to the cervix with an acute angle going from caudal to cranial shaped arcade. The blood flow in this angle can easily be influenced by the many anatomical connections in this area (cervix-corpus axis of the uterus, Lig. latum, Lamina SRGP [sacro-recto-genito-pubicale], Lig. sacrouterinum with the connection to the M. piriformis and the connection to the bony pelvis and the pelvic floor). Work on the Lig. latum left with soft tissue techniques and balanced membranous techniques, on the left lamina STGP and pelvic floor which shows tension of the left M. levator ani, this caused a better blood flow and a better angle between the cervix and the corpus uteri. Balance of increased sympathetic activity over the sacrum and the occiput with craniosacral work because the mother was very nervous about the message about her unborn children [6,8,9].

At the next day the results of the Doppler examination are better and the patient is no more necessary to be hospitalized. (Foetus 1: A. umbilicalis PI 1,47, Ductus venosus 0,74, Foetus 2: A. umbilicalis 1, 76, Ductus venosus 0,72)

Treatment in the 27th week

Meanwhile the patient went to the university clinic for check-ups every week (with ultrasound, bloodpressure and urincheck for proteins and glucose). The results of the Doppler examination were stable, the dystrophy was still there but the second foetus was growing.

Evening out between the two chorions with treatment via the amniotic membrane: with the first foetus very strong tension on its side with a bulge on the side in direction of the second foetus. Relaxation and treatment of the two chorions with their different liquid tensions and volumes. Work on the amniotic membrane is a Seams technique whereby both layers of membranes and their contact with each other are balanced and where one may balance the space between the cell layers. This biodynamic technique can be very useful between two fluid filled compartments, if one compartment has more volume, the membrane of the other one gets squeezed and can not excrete the amniotic fluid properly. Balancing these two layers is necessary to get equal amniotic sacs [1,6,10,11].

Connection between the two foetuses with each other and the suggestion of a communicative exchange which had hitherto not taken place.

Treatment of the second foetus which centralizes more and more. Dr. Urbanek felt a strong flexi-lesion as well as a hypoperfusion of the pelvis and lower extremities. If an intrauterine foetus does not receive sufficient oxygen via the umbilical cord and the placenta, the peripheral organs will be less well supplied with blood and only the vital organs will get enough blood. This is called centralization, which can be recognized through Doppler measurements of the vessels of the umbilical cord, aorta and the central cerebral artery and the coronary veins. Further there was a strain of the umbilical cord insertion of foetus 2 and a low blood flow to the placenta. The feeling of the placenta on one side was spongy and swollen, on the other dry and flat [3-5].

Craniosacral and biodynamic treatment of the second foetus with ignition over the cysterna chyli, whereupon the blood supply to the foetus was balanced also in the pelvis and the lower extremities as well as the tendency to flexion. Balancing the umbilical strains and liquid-balance in the placenta [12-15]. Repeated treatment of the left uterine artery, which was slightly rotated again so that the blood flow was not ensured. Because of strong flexion-lesion with centralization of the second foetus osteopathic control would follow in a week's time.

Treatment in the 28th Week

Both foetuses felt inconspicuous, the amnions were balanced, both in form as well as in volume and density [6,10,11,15]. The communication between the twins was functioning. The mother-to-be received treatment to the diaphragm pelvis (restrictions on the left side) and diaphragm thoracic (it stands high on the right side) using muscle energy techniques [6]. Summarized diagnosis of the ultrasound treatment at the clinic: timely developed monochorionic twin pregnancy with no evidence of a twin-to-twin transfusion syndrome.

Treatment in the 30th Week

Again treatment of the mother's pelvic diaphragm, left tension of the levator ani muscle and work on the ligament sacrouterinum left with a left rotation of the sacrum. Gentle treatment of the sacrum by balancing the ossification centres and waterbeds (this is an biodynamic approach to balance the connection of the sacrum with the ileum) [10,11]. Treatment of the uterine artery on the right over the lig latum and the lig sacrouterinum with ligamentous techniques. The mother and foetuses were doing well [6,9].

Monochorionic twins with weightdiscordance fet1 > fet2, no sign of a TTTS-syndrom.

Foetus 2: pathological flow of the A.umbilicalis. High risk pregnancy. Weight: foetus 1: 1394 g, foetus 2: 1058 g.

Treatment in the 33rd Week

The mother became much more self-confident and came on her own for the last three appointments. She had built a very good relationship with her unborn children. She complained of experiencing pressure in the liver area and sacrum pain when lying down.

The results of the Doppler examinations showed much improvement. The gynaecologists in the risk ambulance were surprised and astonished over the positive course of the pregnancy. They did not have an opinion about osteopathy but were open-minded in view of the results.

Visceral treatment of the thoracic diaphragm, restrictions on the left, liver in inspir position, work on triangular ligament with ligaments techniques an structural technique of the 10th rib [6]. Treatment of the psoas muscle by energetic muscle techniques, sacrum deviation to the left, treatment compensation of bone cores as described above. Treatment of the uterine artery to the left, the cervix and lower uterine segment, as a left twist had developed in this area with ligamentous balanced techniques of the lig. latum and the lig sacrouterinum and sign of TTTS. These frequent twists are caused by the rapid growth of the uterus in twin pregnancies and the foetal lie.

Ultrasound of the university clinic: Foetus 1. BIP 83 mm, FOD 113 mm, KU 323,6 mm, ATD 90 mm, ASD 86 mm, AU 276,5 mm, FL 63,8 mm, weight (Hadock) 2114 g, HA pos, II. headposition, normal hydramnion, foetus 2: BIP 84 mm, FOD 111 mm, KU 306,3 mm, ATD 80,4 mm, ASD 84 mm, AU 258,2 mm, FL 58,5 mm, weight (Hadlock) 1650 g HA pos, I. headposition, normal hydramnion, Doppler: foetus 1: A. umbilicalis: PI 1,09, EDF positiv, Venouse Doppler: Ductus venosus A-wave positiv, PIV 0,280, Fetus 2: A. umbilicalis, PI 1,28, EDF positiv, Venouser Doppler fetal, Ducuts venosus: A-wave positiv, PIV 0,680

Diagnosis: pregnancy of twins with discordance Fet 1 > Fet 2, no sighn of TTTS, suspicious of Christmas-Cracker constellation, foetus 2: A. umbilicalis normal, high risk pregnancy.

Treatment in the 36th Week

The patient had already experienced slight contractions during the past few days. The caesarean section had been planned to take place at a

private hospital during the following week. She had decided to carry out the birth assisted by a private team of gynaecologists and paediatricians because of the possibility to be with the children immediately after their birth and to breastfeed them, which would not have been possible at the university clinic.

Osteopathic findings: cervix soft and centred in the pelvis, the hormone axis nothing notably and pituitary hypertrophic already prepared for the hormone release at the onset of labour. The pituitary gland has a better supply of blood just before birth, as it prepares for the hormone release oxytocin. Slight twist of the pelvic floor, slight rotation of the cervix to the left and rotation of the left uterine artery. Treatment of these restrictions.

Foetus 1 was doing well, the head was not yet centred on the internal os of the uterus. When the head is centred on the inner cervix, it indicates imminent birth. Foetus 2 showed an umbilical strain which was treated osteopathically by Dr. Urbanek, otherwise he was fine. Intrauterine umbilical strains can be indicative of an umbilical cord loop or irregular placental perfusion. The latter was found here and the region relaxed.

A week earlier, investigations at the hospital had yet again diagnosed a significant growth discordance (foetus 1 bigger than foetus 2). However, no evidence was found of a twin-to-twin transfusion syndrome. The pregnancy would still be considered as a risk pregnancy. Even on the day before the sixth treatment, there was no indication of a TTTS. The development of both foetuses was inconspicuous.

US University clinic

Pregnancy of twins with discordance significant weight discordance foet 1 > foet 2, no sign of TTTS. (Lightly pathological Doppler at fetus 2).

Twin pregnancy with discordance, significante weights discordance Foetus 1 > Foetus 2, no sign of TTTS.

Foetus 1: BIP 95 mm, FOD 118 mm, KU 334,6 mm, ATD 83,5 mm, ASD 101 mm, AU 289,8 mm, FL 66 mm, weight (Hadlock) 2402 g, HA positiv, II head position, hydramnion normal, positive movement of the child, Foetus 2: BIP 89 mm, FOD 116 mm, KU 322 mm, ATD 92 mm, ASD 88 mm, AU 282,7 mm, FL 62 mm, weight (Hadlock) 2090 g, HA positive, I headposition, hydramnion normal, positive movement of the child,

Doppler Sonography: Foetus 1: A. umbilicalis: PI 1,26, EDF positiv, Foetus 2: A. umbilicalis: PI 1,08, EDF positive

Diagnosis: Twin pregnancy with weight discordance.

Significant weight discordance Foet 1 > Foet 2, no sign of TTTS, high risk pregnancy.

Doppler: Foetus 1: A. umbilicalis: PI 0,97, EDF positiv, Venouse Doppler foetal: Ductus venosus: A-wave postiv, PIV 0,610.

Summary: normal umbilical Doppler.

Foetus 2: A. umbilicalis: PI 1.04, EDF positiv, Venouse Doppler foetal: Ductus venosus: A-Wave: positiv, PIV 0,340, summary: normal umbilical Doppler.

Diagnosis: normal development on time Monochorionic twins without a sign of a TTT syndrome.

Foetus 1: normal development.

Foetus 2: normal development.

High risk pregnancy.

Treatment: 24 hours after caeserean section

The mother and the two children were doing well, the mother was already up, could eat and the circulation was stable. Surprisingly both children there was hardly any need for post-partum treatment. Apparently they were well prepared for the transition to life outside the womb.

Boy 1, Aurin, 2390 g/48 cm, Apgar score 09/10/10: rosy, good vitality, slight restriction in the area of the right C0/C1 with rotation of the occipital squama to the right. Opening of an impingement of the right foramen jugulare and treatment of occipital parts (balancing all four parts). Balancing these with one another and stabilization on the meninges harmonized the connection to C1 and C0 by balancing the dura-sacs and the tensions of the dura. Visceral treatment of a tension of the ligament falciforme and of a diaphragm which stands cranial, good and prompt response [12,14,15].

Boy 2, Connor, 2100 g/48 cm, Apgar score 09/10/10: rosy, very lively, light sympahticotonus, osteopathic treatment of an umbilical strain and balance of the autonomic nervous system by work on the sympathetic and vagus nerve trough balancing the occiput and the sacrum with the plexi of the nerve at S2 and also the ganglions of the sympathicus along the vertebra [12,14,15].

Maternal treatment: pelvic balance and treatment of the position of the uterus. Right deviation and tension balance of the uterotomie-scar. Treatment of spinal puncture L3-L4 and repealing of local rotation of the dural sac with continuous tension to cranial [6,9].

Discussion

The osteopathic treatment in connection with noticeable pregnancies (Gemini, dystrophy, noticeable circulation during organ screening with risk of pre-eclampsia) is of great importance. Often in these cases, on one side of the uterus a hypo perfusion of the uterine artery is noticeable. This may be caused by restrictions of the surrounding tissue, for example by the direction of the uterus, the muscular lining of the inner pelvic, but also by the outer muscles of the pelvis and over the pelvic floor.

Especially the pelvic floor for the blood flow to the uterus is of utmost importance, since the innervations of the uterus rises from caudal and is in close contact with the sacrum and the diaphragm pelvis. Also cervix lesions after a curettage, conisations or after inflammations as they can occur, favour a rotation between the cervix and uterus and this easily changes the flow volume of the uterine artery at this area.

In twin pregnancies, the frequency of which has risen due to in-vitro fertilization, the motherly tissue is particularly affected by a faster growth of the uterus, the position and weight of the children. As a result, it is more common to experience restrictions in the field of circulation. Of course, in the osteopathic treatment not only should the anatomy of the mother be considered but also the anatomy and needs of the unborn child.

Dr. Urbanek was deeply moved that such an early dystrophy of one twin could have such a positive outcome with the appropriate measures. In addition, taking care of the patient Maria T. was a crucial experience. It showed Dr. Urbanek how important the rationale of Dr. A.T. Still is to aim for good blood circulation and how immensely important the uterine artery is for the supply of blood to the placenta in the case of pregnancies. Since then Dr. Urbanek has accompanied twin pregnancies osteopathically with positive results. She would like to encourage all colleagues especially those involved with multiple births to examine the vessel flow and treat it if necessary.

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